

SHAN Beteiligungsgesellschaft m.b.H.

Claims:

1. A hybrid polypeptide comprising at least two different allergenic proteins or fragments thereof wherein each fragment consists of at least eight consecutive amino acids of the respective allergenic protein.
2. A hybrid polypeptide according to claim 1 wherein the hybrid polypeptide comprises at least one complete allergenic protein.
3. A hybrid polypeptide according to claim 2 wherein the hybrid polypeptide comprises at least two complete allergenic proteins.
4. A hybrid polypeptide according to claim 1 wherein the hybrid polypeptide comprises at least one fragment of an allergenic protein which fragment has a substantially reduced allergenic activity compared with the allergenic protein from which it is derived.
5. A hybrid polypeptide according to claim 4 wherein the hybrid polypeptide comprises fragments of at least two different allergenic proteins all of which fragments have a substantially reduced allergenic activity compared with the respective allergenic proteins from which they are derived.
6. A hybrid polypeptide according to any of claims 1-5 characterized in that it comprises at least three different allergenic proteins or fragments thereof.
7. A polynucleotide encoding a polypeptide according to any of claims 1-6.
8. The use of a polynucleotide according to claim 7 for the preparation of a DNA vaccine.
9. A cell transfected or transformed with a polynucleotide comprising a polynucleotide according to claim 7.
10. A pharmaceutical composition containing a polypeptide according to any of claims 1-6, a polynucleotide according to claim 7 or a cell according to claim 9.

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11. A pharmaceutical composition according to claim 10 which is a vaccine composition.
12. A pharmaceutical composition according to claim 10 or 11 further containing an adjuvant.
13. A method for the preparation of a hybrid polypeptide according to any of claims 1-6 comprising the following steps:
- a) providing a polynucleotide encoding the hybrid polypeptide;
  - b) introducing said polynucleotide into a host cell; and
  - c) culturing the host cell obtained in step b) under conditions such that the hybrid polypeptide is expressed; and
  - d) recovering the expression product from the cell.
14. A method according to claim 13 wherein the polynucleotide encoding the hybrid polypeptide is prepared using PCR technology.
15. A method for the preparation of a hybrid polypeptide according to any of claims 1-6 characterized in that the polypeptide is prepared by chemical synthesis.
16. The use of a hybrid polypeptide according to any of claims 1-6, or of a polynucleotide according to claim 7, or of a cell according to claim 9 for the preparation of a medicament for the treatment of an allergic disorder.
17. The use of a hybrid polypeptide according to any of claims 1-6, or of a polynucleotide according to claim 7 or of a cell according to claim 9 for the preparation of a medicament for prophylactic vaccination or tolerance induction.
18. The use of a hybrid polypeptide according to any of claims 1-6 for the detection of antibodies against an allergenic protein in a sample.
19. The use according to claim 18 wherein the detection is performed by in vitro antibody tests, tests using cells and in vivo tests.

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